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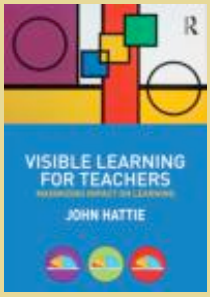

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Visible Learning for Teachers:

Maximizing Impact on Learning

By John Hattie (Routledge, 2012)

S.O.S. (A Summary of the Summary)

The main ideas of the book are:

~ The big idea is – know thy impact! Expert teachers are not wedded to specific teaching strategies – rather, they regularly focus on *evaluating the effects* they have on students, and adjust teaching methods accordingly.

~ When teaching and learning are "visible" – that is, when it is clear what teachers are teaching and what students are learning, student achievement increases.

Why I chose this book:
John Hattie made quite a splash with the publication of his earlier book, *Visible Learning,* in 2009. This book is based on a huge 15-year research project to discover what works in schools. In fact, one reviewer called it "teaching's Holy Grail."

By synthesizing over 50,000 studies related to achievement in school-aged students, Hattie conducted the biggest ever evidence-based research project in education.

While research in education has come up with many findings, by synthesizing an enormous number of studies in such a rigorous and thorough way, Hattie has provided us (perhaps not with the Holy Grail) with a much more solid foundation of scientific research than we have ever had in the field of education!

SO, what does this mean? And why didn't I summarize his earlier book, *Visible Learning*?
It means that Hattie is taking the guesswork out of education by stating there *are* practices that we know are effective in the classroom and there are practices that we know are not. We *do* know what works.

Visible Learning told the story of the factors that have the greatest impact on learning. I chose to summarize this book because it translates that story into information schools can put into practice. Also, honestly, it's not as dense for educators to read through.

Note that this book does *not* provide a simple program or easy answers. This is a book of ideas that help practitioners understand the subtleties of research. It will take time to wrestle with some of the nuanced ideas – you can't just say, "Oh, we need more feedback" and run with it, because you may end up *lowering* student achievement. You need to do a close reading of these ideas.

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Chapter 1 – What is "Visible Learning"?

What is "visible learning"?
This book is about the attributes of schooling that will truly make a difference for student learning. It is based on evidence from John Hattie's book *Visible Learning*. The 'visible' refers to a few things. First, it refers to making student *learning* visible to teachers so they can know whether they are having an impact on this learning. Further, it also refers to making *teaching* visible to the student as well so that students learn to become their own teachers, an important component of becoming lifelong learners – something we want students to value. The 'learning' part of visible learning -- and a common theme throughout the book -- is the need to think of teaching with *learning* in the forefront and with the idea that we should consider teaching primarily in terms of its *impact on student learning.*

The evidence from Visible Learning *(2009)*
The ideas in this book are based on the preponderance of evidence that comes from Hattie's earlier book, *Visible Learning.* That book was based on over 800 meta-analyses (a method of combining results from different studies to identify patterns) of 50,000 research articles and about 240 million students. The most important discovery from the research was that almost *any* intervention can claim to "work." Almost every intervention had an effect size above zero which simply means that the intervention had *some* positive effect on achievement. However, if every intervention has *some* effect on achievement, then all we need to do is implement more of what we already do – so all we need is more money, more resources, more teachers, and all of our problems will be solved. However, this will *not* solve the problems in education. Instead, we need to be *more discriminating*. Rather than looking at any practice that has an effect size of more than zero ($d > 0$), in *Visible Learning* Hattie suggests that an effect size of 0.40 should be considered the *hinge-point*. An effect size of 0.40 is about the average effect we expect from a year's schooling. Therefore we should aim to implement those interventions of 0.40 and above because those are the ones that will truly improve student achievement.

Chapter 2 – The Main Implications from *Visible Learning*

This chapter introduces the main implications from Hattie's earlier book, *Visible Learning*. However, it is important not to assume that this book is a substitute for the detailed discussion of the evidence presented in that book. Hattie wants to insure that we do not walk away with simplistic interpretations from his conclusions. For example, we might assume that any intervention with an effect size of less than 0.20 ($d < 0.20$) would be considered small, 0.3 to 0.6 would be medium, and more than 0.6 would be large. Instead, it would depend on the amount of resources needed for the intervention. For example, the effect of reducing class size from 25-30 students to 15-20 students is 0.22 and the effect of programs in test-taking is 0.27. Both of these fall under the category of "smallish" effects, but the latter is far cheaper to implement than the former. Because of the better return on the cost of the latter, this has a far different implication for implementation. We must go beyond the effect size in determining whether or not to implement the intervention.

Hattie also cautions the reader to be careful when interpreting *overall* effect sizes. He urges readers to *read the accompanying dialogue* and not to simply look for the practices the with highest effect sizes. For example, the *overall* average effect between homework and achievement is $d = 0.40$. But if you read the discussion carefully, you see that the effects of homework were *higher* for *high-school students* ($d = .50$), perhaps because they had better study habits than for elementary-school students ($d = -0.08$). Hattie suggests that the effect size should serve as a *starting point* for **discussions** rather than an endpoint for **making decisions**. Furthermore, in this example, these numbers represent how we have done homework *in the past*. These numbers can provide a wonderful opportunity for educators to try something different. In fact, rather than abandoning homework (because many parents judge a school by the presence of homework), some schools in New Zealand changed their approach to homework by introducing a website of "homework challenges" and evaluated the effects of this new change on student motivation and achievement. When schools evaluate the impact of what they do on student learning, this is *visible learning*. And *that* is the primary message of this book: become evaluators of your effect. Aim for a $d > 0.40$ effect, and evaluate the effects of what you are doing.

Visible Teaching and Learning
The principle throughout the book is "visible teaching and learning." When the *teaching is visible* the student knows what to do and how to do it. When the *learning is visible* the teacher knows if learning is occurring or not. Teaching and learning are *visible* when the learning goal is not only challenging but is *explicit*. Furthermore, both the teacher and the student work *together* to attain the goal, provide feedback, and ascertain whether the student has attained the goal. Evidence shows that the greatest effects on student learning come when not only the students become their own teachers (through self-monitoring, and self-assessment), but the teachers become learners of their own teaching (to be explained below). In successful classrooms, both the teaching and learning are visible.

Teachers' Mind Frames
A key part of successful teaching and learning has to do with the teacher's *mind frame* – the teacher's view of his or her role. It is critical that teachers see themselves as *evaluators* of their effects on students. Seeking interventions and actions that have positive effects on student learning ($d > 0.40$) should be a constant goal for teachers. Teachers should be vigilant to see what is working and what is *not* working in the classroom. Then teachers must use this evidence to inform their actions and their use of every possible resource (especially peers) to move students from where they are now to where the teacher thinks they should be. It is when a teacher has an **appropriate mind frame** combined with **appropriate actions** that these two work together to achieve a positive learning effect. We need to help teachers develop a mind frame in which they see it as their primary role to evaluate their effect on learning.

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Chapter 3 – The beliefs and commitments of expert teachers

As educators, we often put undue emphasis on *the students* for why they can't learn – it's because of their backgrounds, their lack of motivation, their learning styles, their inattention, and their unsupportive parents. While it is true that the largest source of variance in student learning outcomes can be attributed to students, the underlying premise of this deficit thinking is that educators cannot change students. However, we *must* consider ourselves to be *change agents*. Hattie argues that teachers' beliefs and commitments are the greatest influences on student achievement *over which we have some control*. This chapter provides an overview of the beliefs and commitments of the most successful teachers.

The research shows that teachers clearly *do* make a difference. In fact, the difference in effect between a high-effect teacher and a low-effect teacher is about 0.25 which means that a student in a high-impact teacher's classroom learns about *a year more* than his or her peers in a lower-effect teacher's classroom. This chapter makes the claim that the differences between higher- and lower-effect teachers primarily relate to the *attitudes* and *expectations* teachers have when they decide on the core issues of teaching – what to teach, what level of difficulty to teach at, and how rapidly to progress. It is the attitude or belief system of expert teachers that really sets them apart.

Five Attitudes and Beliefs of Expert Teachers
Based on a review of the literature, Hattie was able to identify five major dimensions of excellent or "expert" teachers.

1. Expert teachers identify the most important ways to represent the subjects they teach
The research in *Visible Learning* showed that teachers' subject-matter knowledge did *not* improve student achievement! However, expert teachers *do* differ in how they organize and use this content knowledge. They know how to introduce new content knowledge in a way that integrates it with students' prior knowledge, they can relate the current lesson to other subject areas, and they can adapt the lessons according to students' needs. Because of how they view their approach to teaching, they have a greater stock of strategies to help students and they are better able to predict when students will make errors and respond when they do. They seek out evidence of who has not learned, who is not making progress, and they problem solve and adapt their teaching in response.

2. Expert teachers create an optimal classroom climate for learning
The best climate for learning is one in which there is trust. Students often don't like to make mistakes because they fear a negative response from peers. Expert teachers create classrooms in which errors are welcome and learning is cool.

3. Expert teachers monitor learning and provide feedback
Expert teachers know that a typical lesson never goes as planned and they are skilled at monitoring the current status of student understanding. They are excellent seekers *and* users of feedback about their teaching – that is, they see student progress as feedback about the effect they are having on learning. To do this they must regularly gather information to know who is not understanding.

4. Expert teachers believe all students can reach the success criteria
Expert teachers believe that intelligence is changeable rather than fixed. This means that not only do they have a high respect for their students but that they *show* a passion that all students can succeed! While passion may be difficult to quantify, students are certainly aware of whether or not their teachers exhibit this passion. In one study of the students of over 3,000 teachers (The Measures of Effective Teaching Project sponsored by the Gates Foundation), students overwhelmingly *stated* that the teachers of classes with the most student achievement gains were the teachers with the most passion (as defined by seven adjectives starting with 'C' – teachers who care, control, clarify, challenge, captivate, confer, and consolidate).

5. Expert teachers influence a wide range of student outcomes not solely limited to test scores
Overall, expert teachers exert positive influences on student outcomes and these are *not* confined to improving test scores. Expert teachers influence students in a wide range of ways: encouraging students to stay in school, helping them to develop deep and conceptual understandings, teaching them to develop multiple learning strategies, encouraging them to take risks in their learning, helping them to develop respect for themselves and others, and helping them develop into active citizens who participate in our world.

Chapter 4 – Preparing the lesson

There are four important parts to consider in preparing to teach a lesson listed below.

The Four Critical Parts of Planning
1. Prior Achievement: The levels of students at the start
2. Targeted Learning: The desired levels at the end
3. Progression: The rate of progress from the start to the end
4. Teacher Collaboration

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1. Prior Achievement: The levels of students at the start
A student's prior achievement has a powerful impact on his or her achievement ($d = 0.67$). What this means is that what students bring to the classroom is a powerful predictor of how well they will achieve. In other words, the brighter a student is at the beginning of the year, the more he or she will achieve. Therefore, the role of the teacher is to *disrupt* this so that those who are behind can learn just as much as the brightest students who walk in the door. For this reason, any lesson planning must begin with teachers developing a deep understanding of what students *already know and can do*. In addition to learning *what* students know, teachers also need to learn *how* their students learn as well. Since they want all of their students to reach the same high level of thinking, this will require teachers to be particularly attentive during peer-to-peer discussions and will really require teachers to *listen* as well as talk in order to learn about their students' learning. This contrasts with what is actually occurring in classes. For example, in one study, (Lingard, 2007), 1,000 classrooms were observed and there were particularly low levels of intellectual demand and an overpowering presence of teachers talking and students sitting passively waiting. We need to reverse this trend in classrooms.

In addition to prior achievement, students also bring attributes and dispositions that affect their ability to learn. For example, these might include motivation to learn, strategies to learn, and confidence to learn. Teachers need to know which self-attributes students bring to the lesson so they can enhance these attributes and thereby increase the learning. For example, one self-attribute is *self-efficacy* – the confidence that we can make our learning happen. Those with high self-efficacy see challenging tasks as opportunities to learn something new and those with low self-efficacy may avoid difficult tasks and deny personal agency. Teachers need to know this information about students so they can enhance student confidence, help students to accept rather than reject feedback, and help them compare their work to academic goals not to other students' work. Teachers can actively teach these dispositions. It particularly helps if teachers understand the attributes and dispositions their students bring to class.

2. Targeted Learning: The desired levels at the end
In planning lessons, there are two parts to consider in thinking about the targeted learning – or where teachers want students to end up. The first is being clear about what is to be learned – the *learning intention* or objective. The second is having a way to know that the learning has been learned – the *success criteria*. These both must be visible for the teacher and the students. The teacher must be clear about the goals in order to keep the class on track toward the objective. Further, the teacher needs to know *not* when the students have completed the *activities*, but rather, when they have learned the concepts and understandings.

Learning Intentions/Objectives
Effective planning involves deciding on appropriately challenging goals and *then* structuring learning situations so students can reach those goals. Having clear learning goals is vital if we want to develop a good assessment and provide accurate feedback to students about how to be successful. If we want students to achieve learning goals, teachers must start by communicating clear goals to students. This involves much more than having students chant the learning intentions at the start of class. Instead we must help students develop a deep understanding of what they are supposed to learn, help them understand what success will look like, how the lesson's tasks relate to the intention, and at the end of the lesson, how much closer they have come to achieving the success criteria.

Success Criteria
Success criteria let students know when they have achieved the learning goal. Imagine if you were told to get in your car and you would be informed when you had successfully arrived at your destination. School feels like this for too many students. It's not a surprise that they get turned off of learning. Furthermore, we can do more than sharing success criteria with students, we can involve them in *making* the success criteria. The idea is to get students engaged in and enjoying the challenge of learning that will keep them invested in and committed to school. Below are five components of learning that relate to the learning intentions and success criteria: challenge, commitment, confidence, high expectations, and conceptual understanding.

a. challenge – Creating a challenge is one of the most essential roles of the teacher because this is the essence of how students learn. However, this is incredibly tricky. Challenge depends on what students already know, so teachers must know students' prior levels of achievement and dispositions. Furthermore, challenge should not be too difficult. To take on a challenge, students need to know about *90 percent* of what they are aiming to master in order to enjoy and make the most of the challenge. In reading it is even *higher* – students must know about 95 – 99 percent of the words on a page before they can enjoy it!

b. commitment – Creating lessons in which students are committed to the learning often comes from creating lessons that are challenging. Two of the most powerful ingredients in planning are commitment and challenge. Peers are also a major source of commitment to school learning through pressure, modeling, and competition.

c. confidence – Having the confidence that they can achieve the learning goals is a vital component of success. This confidence can come from four sources: the student (from past success in learning), the teacher (from quality teaching and feedback), the tasks (from appropriate scaffolding), or peers (from feedback).

d. high expectations – The influence that was highest in all of *Visible Learning* was self-reported grades. Students have reasonably accurate understandings of their levels of achievement. Across six meta-analyses (about 80,000 students), the effect was $d = 1.44$ or a correlation of about 0.80 between students' estimates and their subsequent performance in school tasks. It is important to note that two

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groups of students were *not as good* at predicting their performances – minority students and lower-achieving students. It has proved difficult to improve the confidence levels of these two groups of students. Rather than having these groups reflect on their performance or rewarding improved performance, the best approach is to emphasize *accurate calibration* and for teachers to provide opportunities for students to predict their performance once they are given clear learning goals and success criteria. Then teaching them to have high, challenging, appropriate expectations is among the most powerful influences in improving their achievement.

e. conceptual understanding – Research has shown that both teacher-created and standardized state-wide tests are dominated by surface-level questions. Students need to develop surface, deep, and conceptual understandings and to do so, all three levels should be integrated into learning objectives and success criteria. Below is an example of three levels of depths of understanding:

Examples of surface, deep, and conceptual levels of thinking (excerpted from p.55)		
Levels of understanding	**LEARNING INTENTIONS**	**SUCCESS CRITERIA**
Uni/Multi-structural	Recognize that light/sound are forms of energy and have properties	I can name one or more properties of light and sound
Relational	Know that sound/light can be transformed into other forms of energy	I can explain how light/sound is transformed into other types of energy
Extended abstract	Understand how light/sound allows us to communicate	I can discuss how light/sound enables us to communicate

3. Progression: The rate of progress from the start to the end
Teachers must also address the curriculum -- what knowledge and understanding must be taught? While there is too little evidence to suggest that the *order of topics* is critical, what is more important is that there is an *increasing level of challenge* that is tied to the choices of activities, lessons, and lesson outcomes. This is often lost when there is an increasing obsession to align the curriculum with what is tested rather than what is worth knowing in order to live a "good life." Furthermore, another key idea in thinking about curriculum has to do with how students *progress* through the curriculum. Hattie's research team analyzed student achievement in New Zealand and found that the single greatest issue was the need for the teachers to develop a common understanding of progress. For example, almost every teacher considered it a badge of valor to dismiss any evidence of progress from previous teachers when new students came into their classes and decided to reassess students at the start of every year. The time lost to reassessing students may have had the same effect as the so called "summer effect" that reduces achievement over the summer (d = -0.10). If there were transfer plans or if teachers had a common understanding of progress, this might not happen.

4. Teacher Collaboration
One of the major takeaways from *Visible Learning* is that there is great power from teachers learning from each other and talking together about planning – discussing everything from learning intentions, success criteria, learning progression, to what it means to be "good at" a subject. Having a core discussion about what it means to be "good at" English, math, etc. leads to important debates about evidence of student learning, quality of teaching, student outcomes – most of the topics that lie at the heart of teaching and learning. When teachers do *not* have common understandings about how students should progress through the curriculum and outcomes to strive for, then individualism, personal opinions, and "anything goes" pervade the school. When teachers begin to collaborate and develop common understandings, particularly a common understanding of progression in school, then all begin to move in the *right* direction based on collaborative critique, distributed problem solving, and multiple interactions.

There are a number of ways to engage teachers in collaborative discussions about student progression. For example, teachers can discuss indicators of milestone performance (by looking at examples of student work); teachers can collaboratively grade student work across classes or grades; and teachers can plan curriculum together. However, the most successful method Hattie has encountered is the *data teams* model in which small teams of teachers meet every two to three weeks and follow a specific structure to examine student data, set incremental goals, engage in discussion about goals and improving instruction, and create a plan to monitor learning and instruction and then repeat the cycle again. It is *not* important exactly what form these teams take – whether they are "professional learning communities" or not. What is important is that teachers are open to looking at evidence of their *impact on students* and *critiquing* each other's impact to better meet the needs of the students.

Chapter 5 – Starting the lesson

There are a number of elements that research shows improve the "flow" of a lesson and contribute to student learning. The elements that are introduced in this chapter include the climate of the classroom, the proportion of student talk to teacher talk, and the use of peers to improve learning. Below is a discussion of these elements.

A supportive classroom climate promotes student learning
In *Visible Learning*, the climate in the classroom was one of the *more critical factors* in promoting student learning. Part of having a positive climate includes the teacher's "with-it-ness" or ability to identify and quickly handle disruptions in order to prevent a disruption to the flow of learning. When students are asked to name a teacher who most impacted them they typically name those who cared or "believed in me." Students know when teachers care. Having this type of positive, caring, respectful climate is a *precursor* to learning. Without this sense of safety and control, there is little likelihood of learning. Students need to know they will be safe to share when they do not know and have confidence when they interact with peers that the teacher will be fair and predictable.

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Part of the climate of the classroom is affected by the climate in the school community. In one particularly interesting study of the ramifications of trust, Bryk and Schneider did a seven-year study of 400 elementary schools and found that the higher the level of relational trust among the school community – principals, teachers, students, and parents – the greater the student improvement on standardized tests! In such an environment, not only are errors tolerated, but they are welcomed and understood as a vital part of the learning process. Together climate and trust are necessary for students to gain the most from making errors and to maximize their learning. One final part of relational trust has to do with relationships between peers. It is imperative that teachers actively structure the classroom climate in such a way that "not knowing" is *not* negative so that students will not be cruel toward peers who do not know and so they can work together until they all understand.

Less teacher talk, more listening
One of the findings of *Visible Learning* is that the proportion of teacher talk to listening needs to change to less talk and more listening! In one study in which students in grades 6 to 12 wore watches that prompted them to record their experiences over 28,000 times found that teachers talk 70 to 80 percent of the time and most of this talk produced the lowest engagement. Further, the more the instruction was challenging, relevant, and engaging, the less the teachers were talking. Another study on teacher talk found that less than 5 percent of class time is devoted to group discussion or to teacher-student interactions that involve a *meaningful* discussion of ideas. Teachers love to talk, but unfortunately most of their talk, even when it calls for a student response, fosters lower-order learning. In addition, a lot of teacher talk is aimed at controlling behavior so the teacher can continue talking, "Keep quiet, behave, listen, and then react to my factual closed questions. Tell me what I have just said so that I can check that you were listening, and then I can continue talking." Of course some imparting of information is necessary, but this imbalance needs to be addressed.

Part of why we need teachers to talk less is because it is important for them to *listen*. Listening allows the teacher to learn about the students' prior achievement and understanding. Listening shows humility, true depth of thinking, and requires genuine dialogue between the teacher and student. It models reciprocity and respect for the students' perspectives. By listening, teachers show they truly value and are modeling deep communication skills more than just the transmission of knowledge. However, teachers do not *perceive* they are dominating lesson time with their talk, but they *are*, as is shown by video analysis, class observations, and event sampling.

The role of peers in student achievement
While in real life we live and learn with peers, much of learning in schools has been aimed at the individual. This is the case even though the effects of peers on learning is high ($d = 0.52$). There are actually many ways peers can influence learning from helping, tutoring, and giving feedback, to simply making school a place to which students want to come. Teachers can play a role in not only mitigating the negative influences of peers, but in enhancing the opportunities for peers to develop a sense of belonging, friendships, and positive interactions among peers. Research shows that cooperation has a more powerful impact on student learning than individualistic learning and competitive learning, however, it must be structured effectively. Students must *first* learn enough surface knowledge before they can be involved in a structured discussion with their peers. Tutoring is another effective form of peer learning ($d = 0.54$) and it is interesting to note that the effects are just as high for the tutor as for the tutee.

Teachers place evaluation, not teaching methods, at the center of their work
We spend far too much time talking about teaching strategies. While there were many successful teaching methods identified in *Visible Learning*, the point is <u>not</u> for teachers to choose the top strategies and implement away. The point is to choose a method and then focus on *evaluating its impact* on student learning. So often we are content to say, "The students seemed to enjoy it," or "The students seemed engaged." However, teachers need to look for evidence – and they should *never* use only test scores – such as teacher judgment, classroom evidence, student reports, etc. in order to get the desired impact (for example, $d = > 40$ within a year's work.) The best way to choose the most appropriate teaching method is to place *more* attention on the evaluation of the effects of the lesson and use this as a starting point to discuss whether the right teaching methods were used. To place *evaluation* rather than *teaching methods* at the center of what they focus on, teachers should follow steps that look like this:

Step 1: Be clear about the outcomes (the success criteria) of the lesson or unit.
Step 2: Decide the best way to measure the unit.
Step 3: Administer this assessment at the start of the lessons.
Step 4: Conduct the teaching.
Step 5: Re-administer the assessment at the end of the lesson or unit. (If you want to calculate whether the effect size for the class or individual students is above .40, see Appendix E of the book for assistance.) Based on the results, what seemed to be optimal and less than optimal about the teaching methods and activities? What changes need to be made?

Chapter 6 – The flow of the lesson: learning

Too often, professional development focuses on *how to teach,* not on *how students learn*. If teachers want to help students improve, they need to take the seemingly invisible process of learning, which occurs "in the head," and make it visible for students. Teachers need to instruct students in "how to learn." Currently, observations of classrooms show that there is very little direct instruction in "how to learn" or the use of various learning strategies. Researchers who studied how frequently teachers were teaching students strategies to help them learn found they did so very infrequently; instead they found that teachers taught content and memorization of that content. Perhaps teachers are not aware that there are many theories of learning and a number of recent books on the topic.

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Below are four ways of thinking about how students learn. The overarching idea is for the teacher to be aware of the desired results (the success criteria and learning intentions) and to understand where the student starts (based on his/her prior knowledge and thinking) and then to be able to use the thinking and learning strategies below to provide instruction at the *right* level and in the *right way* given how the student processes information. This requires that teachers are constantly on their toes to know the difficulty of the activities they are teaching and how each student is responding in order to insure the learning continues to move upward. The idea that teachers should be teaching "at or +1 above" where the students are thinking is a continual theme in this chapter.

Four ways of thinking about how students learn

1. **Capabilities in thinking** – This is Piaget's model for how students learn. Students begin with their own, concrete and personal way of knowing and move up through four phases until they reach a more scientific and abstract way of understanding the world.

2. **Phases of thinking** – This way of learning is when students start with a *surface* understanding of a topic, begin to relate it to other areas, and then expand their thinking until they develop a *deeper* understanding of the topic. Again, when teachers help students move from a surface to a deeper understanding, the idea is to help students work at, or +1 beyond, where the student is now.

3. **Phases of motivation** – Students do not remain constantly motivated! When teachers know which phase they are in, they can work to help students work at, or +1 beyond this phase as well. One four-stage model of motivation involves students first *seeing a gap* between what they know and the intended learning. Then they *plan* to approach the goal, *implement strategies* to help close the gap, and then finally students *examine* whether they have attained the learning goal.

4. **Phases of competence** – In this model of learning, students go through three major phases from *novice,* to *capable*, and finally to *proficient*. At the capable level students will have a deep foundation of factual knowledge and will have organized that knowledge for retrieval. At the level of proficiency, students should be able to have a meta-cognitive approach that allows them to take charge of their own learning by defining their own learning goals and monitoring their own progress.

When teachers know where students are in the different levels of thinking suggested in these models, *and* teachers know the *next higher level of thinking* toward which students should be working, this is where they can intervene to optimize students' growth. Given such a wide variety of ways of learning, and the diversity of levels students will be on, this suggests the importance of *differentiation*. However, this does *not* mean that homogeneous groups are the answer. If teachers aim to move students "+1" beyond their current levels, then it can be more useful for students to work with other students who see things differently.

Differentiation

All four of the above approaches to learning involve the teacher knowing where students are in their learning so they can move them "+1" beyond this point. Therefore, providing "whole class" instruction is unlikely to accomplish this. Differentiation requires that teachers know, for each student, where he or she is, on the journey toward meeting the success criteria. Is that student a novice, somewhat capable, or proficient? What learning strategies does the student have and how can the teacher help the student develop *other* learning strategies? Then – and this is where differentiation comes in -- depending on which phase of learning, whether their understanding is surface or deep, and their phase of motivation, the teacher can provide *different* ways in which students can demonstrate their mastery of understanding the success criteria. As was stated earlier, the success criteria should be clear to students, but what teachers have students do to arrive at the success criteria may vary. Another typical approach to differentiated instruction is to put students in collaborative groups, but in this case, the groups would *not* be organized by their phase of learning. Rather, students would be grouped by a mixture of those at and those +1 above so that peer interaction can help move all students forward.

Teachers as Adaptive Experts

When teachers have a clear idea of the learning goals and yet are very present in class – listening closely to students and "seeing the lesson through the eyes of students" – this allows them to innovate when the strategies are *not* succeeding. These teachers, who have a high level of flexibility, are called "adaptive learning experts." These are not the teachers with routine expertise that they use over and over, but rather, these are the teachers who pay special attention to students and their understanding so they know when to intervene to advance the learning. Teachers who are "adaptive experts" see themselves primarily as evaluators and problem-solvers.

Strategies of Learning

Hattie reports that recently a consortium of about 35 well-known researchers summarized some of the research-based conclusions about processes for learning. While there are too many findings to summarize here, below are a few of the findings:

- Materials presented in verbal, visual, and multimedia form provide richer representations than a single medium.
- Outlining, integrating, and synthesizing information produces better learning than rereading materials.
- Stories tend to be remembered better than facts and abstract principles.
- Most students need training in how to self-regulate their learning.
- Spaced schedules of studying produce better long-term retention than a single session.
- An understanding of an abstract concept improves with multiple and varied examples.
- Making errors is often a necessity for learning to occur.

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It is easy to be overwhelmed by the vast number of *strategies of learning*. Lavery, 2008 lists the relative effects of some of the learning strategies with the *highest impacts* in the chart below (excerpted from pp.105-106). She found the highest effects from strategies that involve *forethought* (goal-setting, planning, etc.) as well as strategies that involve a more *active* approach to learning.

Strategy	Definition	Example	Effect Size
Organizing and transforming	Overt or covert rearrangement of instructional materials to improve learning	Making an outline before writing a paper	0.85
Self-consequences	Student arrangement or imagination of rewards or punishment for success or failure	Putting off pleasurable events until work is completed	0.70
Self-evaluation	Setting standards and using them for self-judgment	Checking work before handing it in to a teacher	0.62
Help-seeking	Efforts to seek help from either a peer, a teacher, or another adult	Using a study partner	0.60
Keeping records	Recording of information related to study tasks	Taking class notes	0.59
Goal-setting/planning	Setting of educational goals or planning sub-goals and planning for sequencing, timing, and completing activities related to those goals	Making lists to accomplish during studying	0.49
Reviewing records	Efforts to re-read notes, tests, or textbooks to prepare for class or further testing	Reviewing class textbook before going to lecture	0.49
Self-monitoring	Observing and tracking one's own performance and outcomes, often recording them	Keeping records study output	0.45
Time management	Estimating and budgeting use of time	Scheduling daily studying and homework time	0.44

These are all strategies that can be *taught*. In one study, however, results showed that creating a separate "study skills" course that was not tied to any particular *content* was *not* an effective way to teach these learning strategies. It is important to note that, as when discussing success criteria, it is helpful to share examples of success criteria when teaching these learning strategies. For example, in one study, when students were shown examples of the teacher's notes, as well as a rubric by which their own notes would be judged, these students created much more effective notes than students who did not receive either of these things.

Learning requires two major skills: deliberate practice and concentration
Sometimes learning is not fun. It can take years of practice to become an expert in something. Malcolm Gladwell popularized the idea that it takes 10,000+ hours of practice to become an expert. However, this practice is *not* repetitive skill and drill practice, rather, it is *deliberate* practice. Deliberate practice is *different* from just practice. Deliberate practice involves concentration and someone monitoring and providing feedback during the practice. Furthermore, the activity being practiced is usually a challenge for the student and it helps if the student is aware of the goal of the practice and has a clear idea of what success looks like. A major role of schools is to teach students to *value* deliberate practice and learn that this type of practice leads to competence.

In order to engage in *deliberate practice*, students must also be able to *concentrate* or *persist*. This does not mean they need quiet rooms or long periods of time; it has more to do with *quality* than with quantity. It does mean deliberate attempts to focus on the task and deliberate effort to improve performance. The perfect combination of deliberate practice and concentration occurs when students are given challenging tasks that can be mastered given hours of practice that improves with feedback.

Chapter 7 – The flow of the lesson: the place of feedback

The average effect size of feedback on achievement, as documented in *Visible Learning*, is 0.79. This is *twice the average effect of all the other schooling effects* and therefore places feedback among the *top ten* influences on achievement! However, this influence is variable because feedback is not always implemented effectively. This chapter addresses how to make the most of feedback in the classroom. In a nutshell, to make feedback effective, teachers must have a very clear idea of where students *are* and where they are *meant to be* and then they should aim to provide feedback that reduces this gap. There are a number of ways they can go about providing the type of feedback that will reduce this gap that are explained in the chapter.

The three feedback questions
Effective feedback helps students answer three important questions:

1. **Where am I going?** Often students don't know the goal of a lesson and when they are given a goal, it is often *performance*-related, "Finish the task," "Make it neat," "Include as many sources as possible." Teachers need to help students answer the question, "Where am I going?" with a *mastery*-related goal. Teachers can do this by creating clear and challenging learning goals and making sure these learning goals are transparent to students.
2. **How am I going there?** It is valuable when teachers provide students with feedback *relative to the starting or finish point*, and *not* in comparison to other students. Rapid formative feedback – which will be discussed later – is useful here.
3. **Where to next?** This is the most interesting question to students because it helps them choose the next most appropriate challenge and can lead them to developing self-regulation over the learning process.

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The three feedback levels
The following types of feedback are effective when teachers are *aware of* their students' learning levels (novice, proficient, and competent) and aim to provide feedback at the appropriate level.

1. **Task/product level** (for the novice) – This is the most common type of feedback we see in classrooms. It is more information-focused and aims to help students build their surface knowledge. Examples including telling a student when an answer is correct or incorrect or asking the student to provide more of or different information.
2. **Process level** (for the proficient level) – This type of feedback is geared toward helping the student improve the *process* used to create the product. This feedback can help the student develop learning strategies, detect errors, or recognize relationships between ideas. For example, feedback might include, "You're asked to compare these ideas. For example, you could try to see how they are similar, how they are different… How do they relate together?" Feedback at this *process level* enhances *deeper* learning than at the task level above.
3. **Self-regulation level** (for the competent level) – Feedback at this level is more focused on helping the student to monitor his or her own learning process. This type of feedback may serve to enhance the student's confidence to engage further with the task and to encourage the student to seek and accept feedback. This feedback is usually in the form of probing or reflective questions. An example of a comment might be, "You checked your answer with the resource book [self-help] and found that you got it wrong. Do you have any idea why you got it wrong? [error detection] What strategy did you use? Can you think of another strategy to try?

Don't mix praise with feedback
Research shows that in order for feedback to assist with a student's learning, it should *not* be combined with *praise*. While praise is present in *many* classrooms and is used to comfort and support students, there have been several studies that have found a *low effect size* for praise (d = 0.12 in one and d = 0.09 in another). Another study showed that feedback *without* praise has a greater effect on achievement than feedback *with* praise. Overall, the point is not that we should be horrible to students. In fact, the opposite is true – students need to feel that they belong and in schools where there is a high level of trust between students and teachers there are higher levels of learning. Praise your students to make them feel welcome, just keep praise *separate* from feedback about their learning.

Rapid formative assessment
One researcher compared *rapid formative assessment* to 22 other approaches to learning and found it to be the *most* cost effective – this is in comparison to approaches such as a longer school day, more rigorous math classes, class size reduction, a 10 percent increase in per pupil expenditure, an additional school year, and many other approaches.

Rapid formative assessment, as it is being defined, is when short-cycle formative assessments occur during the lesson to provide feedback to teachers and students to help them make decisions. "Should I relearn…Practice again…Move forward?" These "in-the-moment" assessments provide immediate feedback *during the process of learning*. There is a lot of evidence that when these formative assessment practices are woven into the minute-by-minute classroom activities of teachers, there can be a 70 to 80 percent increase in the speed of student learning even when this learning is measured by standardized tests.

Chapter 8 – The end of the lesson

There is a big focus these days on teachers *reflecting* on their lessons. It's easy for teachers to wax poetic about their *teaching*, but one of the main messages of this book is that we need to focus on the *effects* of our actions, that is, our impact on students. In fact, Hattie goes so far as to say, "I never allow teachers or school leaders to visit classrooms to observe teachers; I allow them to observe only students – the reactions that students have to incidents, to teaching, to peers, to the activity." (p. 138) This focus moves the discussion *away* from the teaching toward the *effect* of the teaching. This chapter focuses on the importance of teachers reviewing their lessons, after teaching, by looking for *evidence* that they have had an impact on both the *climate* of the class as well as the progress on each student's learning trajectory toward the learning goals.

Evidence of an optimal learning climate
How a student experiences a lesson plays an important role in that student's engagement and therefore success in the lesson. For that reason, one researcher conducted a major meta-analyses of 119 studies based on 355,325 students to look at the impact of *student-centered teaching.* This is *not* to be confused with a method of teaching. Rather, a *student-centered* teacher is passionate about engaging students with what is being taught and helping them to succeed. Overall, a student-centered teacher has warmth, trust, empathy, and positive relationships. The reason this is important is because the researcher of the major meta-analyses above found high effect sizes (between d = 0.64 and 0.70) for teachers who displayed these characteristics. In evaluating their lessons, teachers must consider whether they created a climate in which students felt *invited* to learn. In addition to the teacher considering the questions below, it is useful to interview students to ask about their reactions as well:

- Did you demonstrate to all students that they were able, valuable, and responsible, and did you treat them accordingly?
- Did the students see that you believe in them, even when they were struggling?
- Did the students get the message from you that they possess untapped potential in learning what is being taught today?

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Evidence of effective learning intentions and success criteria
When evaluating a lesson, it is important to determine the effectiveness of the learning intentions and success criteria. To begin, consider asking, "Did the students know these?" "Could they articulate them in a way that showed they understood them?" and "Did they see them as appropriately challenging?" One way to approach this might be to ask students to keep a notebook in which they write down what they think they are learning, indicators of their progress, and, at the end, whether they believe they have achieved the learning intentions. Another way to evaluate the appropriateness of the learning intentions and success criteria is for teachers to work with other teachers to critique them. Teachers can look at each others' planning to determine whether it matches the success criteria or they can look at student work to evaluate the quality of the learning intentions and success criteria in light of these work samples.

Evidence of learning
Finally, teachers need to examine the impact they have had on each student's learning. They need to be able to answer:

- Are you aware of each student's progress on the journey from his or her starting point toward attaining the success criteria?
- How close is each student to attaining the success criteria?
- What now needs to occur to help each student to move closer to meeting the success criteria?

To answer these questions, teachers need some type of formative assessment that will help to provide them with this type of evidence and which will help to inform their future decisions about their teaching.

Chapter 9 – Mind frames of teachers, school leaders, and systems

The key message of this book is that teachers, leaders, and systems need to be continually aware of the impact they have on students – and from the evidence of this impact, they need to make decisions about changing their approach. However, thus far educators have *sustained the current model* beyond its usefulness. In order to transform schools to places where we focus on *learning* and *impact* rather than on *teaching* and *inputs*, we need to address the underlying *mind frames* that shape our thinking about teaching and learning because it is this thinking that affects the decisions we make in our work. Teachers and school leaders who develop the ways of thinking outlined below are more likely to have a major impact on student learning.

Mind frame 1: Educators believe that their fundamental task is to evaluate the effect of their teaching on students' learning
Teachers believe that the "best" teaching does not mean employing the top teaching methods, rather it involves altering instruction "on the fly" based on feedback about the effects they are having on students.

Mind frame 2: Educators believe that success and failure in student learning is about what they as educators did or did not do
Teachers see themselves as "change agents" who take responsibility for enhancing student learning and setting high expectations.

Mind frame 3: Educators should talk more about the learning than the teaching
Teachers need to recognize that they *mostly talk* about teaching and instead they need to learn how to discuss student *learning.*

Mind frame 4: Educators see assessment as feedback about their impact
Of course assessment is about the student, but teachers need to begin to see classroom assessment as feedback for the teacher as well – Who did you teach well and who not so well? What did you teach well and not so well?

Mind frame 5: Educators engage in dialogue not just monologue
Currently, classrooms are dominated by teacher talk. There is a major need for teachers to see their role as *listeners* – they should listen to students' questions, their ideas, their struggles, their strategies of learning, their successes, their interactions with peers, etc.

Mind frame 6: Educators enjoy the challenge
The teacher's role is not to decide on a challenge and break it into small pieces for the student, but rather to engage the student in the challenge.

Mind frame 7: Educators believe it is their role to develop positive relationships in classrooms and staffrooms
Many teachers create warm relationships, but this is different. Teachers must create a climate such that students believe they can make errors without getting snide looks and comments from peers. Learning requires these errors. Leaders must do this for staff as well.

Mind frame 8: Educators inform families about the language of learning
In order to enhance the engagement of students in their learning, educators must bring parents into the experience as well.

Where to start this change process?
Do not start by lecturing staff. One place to start might be to invite teachers to evaluate their own mind frames to see whether they are shared by other teachers. Perhaps start by asking about their ideas about feedback. Hattie also suggests using Appendix E in the book to begin to look at the effect sizes of practices at your school. Appendix E provides guidance on calculating an effect size. Another important place to begin is by examining the mind frames of the school leaders. They will need to be learning leaders in order to support teachers as they begin to discuss their beliefs and consider moving in a direction where they will begin to examine the impact they have on student learning.

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THE MAIN IDEA's Discussion Questions for *Visible Learning for Teachers*

The ideas in Hattie's book are deep and it is well worth taking the time to discuss them and think them through before jumping to implementation. Below are some discussion questions an instructional leader can use with a leadership team or teachers.

Chapter 1

• What does Hattie mean by "visible" learning and teaching? In what ways is your teaching visible to students? In what ways are you able to make student learning visible?

• What are some ways teachers can make their teaching *more* visible to students?

Chapter 2

• Discuss: "What is most important is that teaching is visible to the student, and the learning is visible to the teacher. The more the student becomes the teacher and the more the teacher becomes the learner, then the more successful are the outcomes." (p.17)

• In this chapter, Hattie outlines the main message of the book. He says that schools and teachers must evaluate the impact of their effect on student learning, become "evaluators of your effect." Given that he just wrote a book, *Visible Learning*, in which he told us which teacher actions have the most impact on student achievement, does this message seem to be contradictory?

• While Hattie does emphasize that teachers should know their impact, he argues that this impact should have *at least* an effect of 0.40. Do your teachers know which influences the research shows have high, medium, and low effects on achievement? Take the chart below, *mix up the order* of the influences, and leave out the ratings. Ask teachers to guess the rating (is it high, medium, or low) for each influence and then have them compare their answers to the actual effect sizes and discuss where teachers had the most misconceptions. (Note this is from Appendix D in the book.)

Influence	Rating (Low/Med/High?)	Influence	Rating (Low/Med/High?)
1. Retention (holding back a year)	Low (-0.13)	16. Phonics instruction	Medium (.54)
2. Student control over learning	Low (.04)	17. Providing worked examples	Medium (.57)
3. Whole-language programs	Low (.06)	18. Direct instruction	Medium (.59)
4. Teacher subject matter knowledge	Low (.09)	19. Cooperative learning (vs. individualistic)	Medium (.59)
5. Gender (male vs. female achievement)	Low (.12)	20. Concept mapping	High (.60)
6. Ability grouping/tracking	Low (.12)	21. Comprehension programs	High (.60)
7. Matching teaching w/student learning styles	Low (.17)	22. Acceleration (e.g., skipping a year)	High (.67)
8. Within-class grouping	Low (.18)	23. Vocabulary programs	High (.68)
9. Reducing class size	Low (.21)	24. Meta-cognitive strategy programs	High (.69)
10. Individualizing instruction	Low (.22)	25. Teacher-student relationships	High (.72)
11. Using simulations and gaming	Medium (.33)	26. Reciprocal teaching	High (.74)
12. Teacher expectations	Medium (.43)	27. Feedback	High (.75)
13. PD on student achievement	Medium (.51)	28. Providing formative evaluation to teachers	High (.90)
14. Home environment	Medium (.52)	29. Teacher credibility in the eyes of students	High (.90)
15. Influence of peers	Medium (.53)	30. Student expectations	High (1.44)

Chapter 3

• Hattie argues that it is the **attitude** or **belief system** of expert teachers that really sets them apart from less effective teachers. The difference between high-effect and low-effect teachers is so great that students in the classrooms of the former group learn about *a year more*. Discuss how it is possible that drastic differences in achievement might be attributed to differences in teacher *attitude*.

• In one well-known study sponsored by the Gates Foundation (The Measures of Effective Teaching Project), students were able to identify the teachers of classes with the most student achievement gains. These students found that these high-effect teachers showed more *passion* as defined by the 7 Cs below. Take a look at this chart and *rate yourself* as you believe your students would rate you. Feel free to take the chart and distribute it to your students to get some feedback on your passion.

The 7 C's – Students' Views of Seven Factors of Classroom Climate (From p.28 in the book)		
Dimensions	**Example Items**	Rate from 1 (Strongly disagree) to 6 (Strongly agree)
Care	My teacher in this class makes me feel that s/he really cares about me. My teacher really tries to understand how students feel about things.	
Control	Students in this class treat the teacher with respect. Our class stays busy and doesn't waste time.	
Clarify	My teacher has several good ways of explaining topics in class and explains difficult things clearly.	
Challenge	In this class, we learn a lot almost every day. In this class, we learn to correct our mistakes.	
Captivate	My teacher makes lessons interesting. I like the ways in which we learn in this class.	
Confer	Students speak up and share their ideas about class work. My teacher respects my ideas & suggestions.	
Consolidate	My teacher checks to make sure that we understand when s/he is teaching us. The comments that I get on my work in this class help me to understand how to improve.	

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Chapter 4

• A student's *prior knowledge* has a powerful impact on his or her achievement. What do you do to know what students *already know and can do* – before each unit? At the beginning of the year? Discuss other ideas for ways to ascertain not only your students' prior level of knowledge, but also their dispositions, and how they think.

• Hattie has shown how important it is for students to truly understand where the lesson is going. Rather than reading the objective off of the board, how can you help students better internalize the lesson's objectives?

• In chapter 4 Hattie writes that having a core discussion about what it means to be "good at" at subject (English, math, etc.) leads to important debates about many of the topics that lie at the heart of teaching and learning – how should students progress through the curriculum, what should be the learning goals and success criteria, and more. Divide teachers up by the subjects they teach (or grades for elementary school) and have them discuss – "What does it mean to be good at math?" or "What does it mean to be a good reader?"

• Use the discussion above as the beginning of a discussion about how students should *progress* through the curriculum. Hattie says the order of topics is less important than insuring an increasing level of challenge. Further, because teachers view it as a badge of valor to dismiss evidence of progress from previous teachers and insist on reassessing students each year, this time lost to learning is equivalent to the "summer effect" that reduces achievement over the summer (d = -.10). Discuss how your school might handle the "transfer" of information about each student's progress from one teacher to the next to avoid this loss or discuss creating a clear enough understanding of the progression of the curriculum so this does not happen.

Chapter 5

• Hattie writes about the importance of relational trust in schools and cites one particularly important study conducted by Bryk and Schneider. They did a seven-year study of 400 elementary schools and found that the higher the level of relational trust among the school community – principals, teachers, students, and parents – the greater the student improvement on standardized tests! Discuss how your school would stand up. Either discuss the items on Bryk and Schneider's "Teacher Trust Scale" below (from p. 71 in the book) or have teachers rate the following items (anonymously) and use the results to discuss how to improve trust at your school.

1. Teachers in this school trust each other.
2. It's okay in this school to discuss feelings, worries, and frustrations with other teachers.
3. Teachers respect other teachers who take the lead in school improvement efforts.
4. Teachers at the school respect those colleagues who are expert at their craft.
5. Teachers feel respected by other teachers.

• Hattie writes that a lot of class time is dominated by teacher talk, and much of this teacher talk consists of low level questioning. However, many teachers do not believe this to be the case despite the fact that this is what is shown in video analysis and class observations. Have teachers bring in a lesson plan for an upcoming day and revise it so they are *not* talking the majority of the time (have them try to plan for *listening* to and *learning* about their students) and so they are asking appropriate higher order questions.

Chapter 6

• Hattie argues that we don't want teachers who come with "routine expertise" and employ the same top strategies over and over. Instead we want "adaptive experts" who know when students aren't learning, what to do next, how to adapt strategies, resources, and even the classroom climate in order to meet learning goals. He says these adaptive experts "see themselves as evaluators fundamentally engaged as thinkers and problem-solvers." Do you see teachers as *evaluators* and *problem-solvers*? Discuss.

• Hattie reports that there are a number of strategies of learning that have high effect sizes, however, it is *not* effective to teach these apart from content as a separate study skills class. Look at the chart below (from pp. 105-6 in the book). Do you teach any of these strategies? Do you see yourself as a teacher of learning strategies? How does your school approach the teaching of these strategies? Design a lesson plan to teach one of the strategies below, but make sure it is within the context of what you are already teaching.

Strategy	Definition	Example	Effect Size
Organizing and transforming	Overt or covert rearrangement of instructional materials to improve learning	Making an outline before writing a paper	0.85
Self-consequences	Student arrangement or imagination of rewards or punishment for success or failure	Putting off pleasurable events until work is completed	0.70
Self-evaluation	Setting standards and using them for self-judgment	Checking work before handing it in to a teacher	0.62
Help-seeking	Efforts to seek help from either a peer, a teacher, or another adult	Using a study partner	0.60
Keeping records	Recording of information related to study tasks	Taking class notes	0.59
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Reviewing records	Efforts to re-read notes, tests, or textbooks to prepare for class or further testing	Reviewing the class textbook before going to lecture	0.49
Self-monitoring	Observing and tracking one's own performance and outcomes, often recording them	Keeping records study output	0.45
Time management	Estimating and budgeting use of time	Scheduling daily studying and homework time	0.44

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• Hattie argues that one of the major roles of school is to teach students the value of *deliberate practice* because this is the type of practice that leads to competence. Discuss the difference between "practice" (repetitive skill and drill) and "deliberate practice" (usually involves challenge, concentration, and someone monitoring and providing feedback during the practice.) You can re-read the section on "deliberate practice" on pp.108-110 for more information.

Chapter 7

• Hattie shares research that **feedback** is tremendously useful in boosting student performance and yet teachers often provide little of it. Have teachers videotape themselves or simply look back at today's lesson. Discuss with a partner – what are some ways you could weave more opportunities to give students feedback into your lessons?

• Discuss this quote from Hattie. Do you agree or disagree? "The major reason for administering tests in classrooms is for teachers to find out what they taught well or not, who they taught well or not, and where they should focus next. If a test does not lead to a teacher evaluating these claims, it was probably a waste of everybody's time and effort."

• Hattie's research shows the importance of formative assessment. The Main Idea has another recent book summary on formative assessment – *Embedded Formative Assessment* by Dylan Wiliam. There are PD workshop ideas to introduce a number of formative assessment strategies to your teachers. Email Jenn if this is not yet on the website.

Chapter 8

• Hattie makes an argument *against* observing teachers – a practice that we take for granted. In fact, Hattie goes so far as to say, "I never allow teachers or school leaders to visit classrooms to observe teachers; I allow them to observe only students – the reactions that students have to incidents, to teaching, to peers, to the activity." (p. 138) This focus moves the discussion *away* from the teaching toward the *effect* of the teaching. He goes on to talk about the importance of seeing the lesson *through the eyes of the student* and even suggests interviewing students to ask them what they were doing, thinking, and not understanding—this is what will really help teachers see the impact of their teaching. What do you think about his approach -- replacing the observation of teachers with observing students and interviewing them? Discuss.

• It's easy for teachers to wax poetic about their *teaching*, but one of the main messages of this book is that we need to focus on our *impact* on students. Rather than waxing poetic about their teaching, Hattie suggests that teachers focus on reflective questions like the following after they teach. In pairs, have teachers think about their lessons today and reflect on these questions:

Better Reflection Questions for Teachers (Rather than waxing poetic about teaching activities)	
Learning Climate	• Did you demonstrate to all students that they were able, valuable, and responsible, and did you treat them accordingly? • Did the students see that you believe in them, even when they were struggling? • Did the students get the message from you that they possess untapped potential in learning what is being taught today?
Learning Intentions & Success Criteria	• Did the students know the learning objectives? Did the students know the success criteria? • Could they articulate them in a way that showed they understood them? • Did they see them as appropriately challenging?
Learning	• Are you aware of each student's progress on the journey from her starting point toward attaining the success criteria? • How close is each student to attaining the success criteria? • What now needs to occur to help each student move closer to meeting the success criteria?

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